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# How to PLANT



**RICHMOND NURSERIES**  
**RICHMOND BEACH, WASH.**  
Tel. Richmond 2041



# IT IS FUN TO PLANT

There is no more satisfying experience than to plant trees, shrubs and flowers and care for them until they become beautiful, growing things. It is not at all difficult to give plants the proper start in life if you but follow the directions in this little booklet.

All nursery stock must be handled with care. It must not be exposed to drying winds or sun before being planted. After being planted, the stock will need food and water.

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## How to Handle Upon Arrival



**T**AKE care of your nursery stock immediately upon its arrival. Weather conditions change suddenly and your stock might be frozen in transit. In that case, put in a cool but frostproof cellar. Don't unpack it

until it is entirely thawed out. The plants won't be damaged if thawed out gradually.

Sometimes trees may be somewhat dried out in transit from contact with hot steam pipes or delay at transfer points. Bury them in wet dirt, tops and all, for a day or two.

If possible, plant at once when shipment is received. If the weather is too cold for planting, put the box or bundle in a cool but frostproof cellar. If the weather is warm and you are not ready to plant, heel the stocks in (see next page) or unpack at once and place stock in a cool cellar. Cover the roots with damp packing from the box or bundle and spread out sacks or canvas over them. Sprinkle enough water on the trees to keep them from drying out, but do not drench the roots and tops.



## **Heeling-In Trees and Shrubs**

### **Temporary Planting**

If possible, heel your trees in a place convenient to the orchard or in the garden, preferably at the north side of a building or woods where they will have protection from the sun and their development will be retarded.

Select a well drained location. Dig a trench deep and wide enough to hold the roots without crowding. This trench or furrow should run east and west so the trees can be leaned toward the south or southwest. Throw the dirt from the trench so as to form a bank. Unpack the trees and place the roots in the bottom of the trench with the tops leaning against the bank.

Keep the varieties separate and spread out the trees so the dirt can be filled in about the roots. Fine, moist soil should be packed rather firmly about the roots to exclude air. Then heap more soil on the roots and a third or more of the tops. Some growers completely cover the trees. This prevents danger of injury from rabbits and mice and drying out of the tops if the weather turns warm. All packing material and grass that might harbor mice should be removed. If the ground is too dry, moisten the dirt about the roots.

## **How to Handle Evergreens**

Evergreens that are balled and burlapped may be slightly dried out. By dipping the ball in a tub of water the soil will become thoroughly moistened. Now if the plants are to be kept a few days before planting they must be stored in a cool place away from sun and wind. Keep earth balls moist by covering with moist soil, leaves or straw. Evergreens shipped without earth balls should be planted as soon as possible.

**Planting is the one purchase you can  
make which increases in value and  
beauty from year to year.**



## How to Prune Before Planting

Many failures of newly transplanted stock are due to the lack of proper pruning. When the trees are dug in the nursery, some of the feeding roots are left in the ground, therefore, when transplanting it is necessary to restore the balance between the roots and the top by removing part of the tops.

In pruning, make a clean sharp cut. Do not leave stub ends in removing branches. Pruning shears, knives and hand saws are the best tools to use. All tools should be sharp.

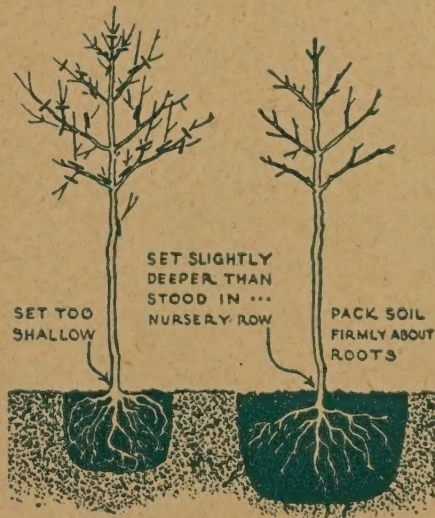
**Shade Trees.** With shade trees having a heavy top, at least one-third of the top should be removed. Prune branches at points indicated by black lines (see illustration at bottom of page). Prune to avoid crowding branches. Cut out some of the small branches, shorten back the side branches, but do not cut off the leader or main stem. Try to get well developed head, strong leader and branches at wide, not close, angles. Cut off all broken roots.

**Shrubs.** It is easier to prune shrubs before they are planted. This is likewise the only time the roots can be pruned. Cut off damaged or frayed roots just above the point affected. Thin out tops of many branched

**Wrong**  
Hole too small, roots crowded.

**Right**  
Hole large, roots spread out.

shrubs, removing the old wood. Cut tops back from one-third to one-half. (See illustration, page 7.)



Prune branches at points indicated by black lines, do not clip ends, cut off broken roots.

With branched **Apple and Pear Trees**, select three to five side branches on different sides of the trunk and 6 to 8 inches apart and cut back one-third their length. Select one of the top upright branches and cut it back in proportion to the side branches. Cut off all other branches close to the trunk. (See illustration, page 5.)

With **Apple and Pear Whips** having no side branches, simply cut off the top just above a bud 2 to 2½ feet from the ground. (See illustration page 5.)

## How to Prune Before Planting—Cont.

With **Peach** and **Plum**, cut off the top about 12 to 30 inches from the ground and cut off any side branches about an inch from the trunk so as to leave one or two buds.

**One-Year Sweet Cherry** are usually whips. Cut the top off just above a bud 1 to 1½ feet from the ground.

**One-Year Sour Cherry** and **Two-Year Sweet** are usually branched. Select three to five side branches, well spaced and on different sides of the trunk and cut off all other side branches close to the trunk.

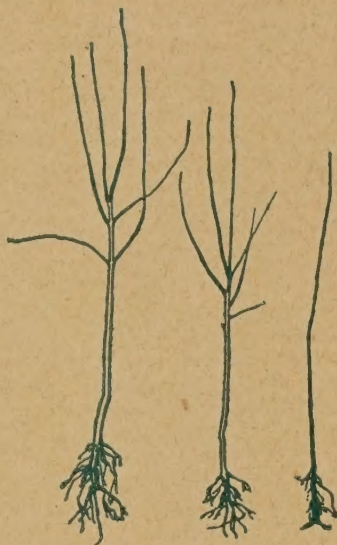
**Raspberry, Blackberry** and **Dewberry**, after transplanting, should have the tops cut back to within 6 inches or less of the ground. Usually that is the way they come from the nursery.

**Strawberry Plants** are easier to handle when transplanting if the roots are sheared off a little, leaving them about 4 inches long. (See illustration, page 13.)

With **Grape Vines** leave just one cane and cut it back to two or three buds.

Set **Privet** for hedges with the branches several inches below the ground and cut off the tops 4 to 6 inches above the surface. (See illustration, page 9.)

With **Roses** cut out entirely all weak or broken canes. Cut back the remaining branches so as to leave only four to six buds to a branch. If planted in the fall, mound up the dirt around them and cover the ground with straw, leaves or similar material.



A 3 year old, 2 year old and 1 year old apple tree before pruning.



A 3 year old, 2 year old and one year old apple tree after pruning. Try not to leave two branches nearly opposite, they will form a bad crotch when the tree is older.



# How to Prepare the Ground for Planting



SPADE DEEPLY

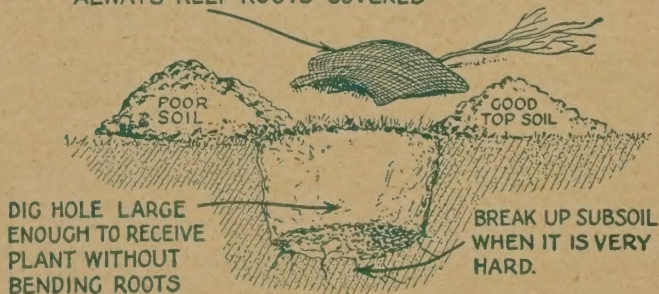
Prepare all shrubs by spading. The deeper the ground is spaded the better. On hillsides where the beds would wash, the plants may be set in holes in the sod. All ground to be set to berries and fruit should be plowed and harrowed before planting operations start.

## How to Plant Trees and Shrubs

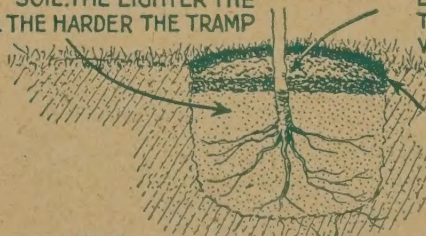
Do not let the roots become dry. Keep them covered at all times with damp sacks or something similar.

Cut off broken or bruised roots just above place of injury. Shorten any roots that are overlong with a sharp knife or sharp pruning shears. See below and next page.

ALWAYS KEEP ROOTS COVERED



FILL HOLE AND TRAMP SOIL. THE LIGHTER THE SOIL THE HARDER THE TRAMP



LEAVE LOOSE SOIL ON TOP OR COVER GROUND WITH MULCH

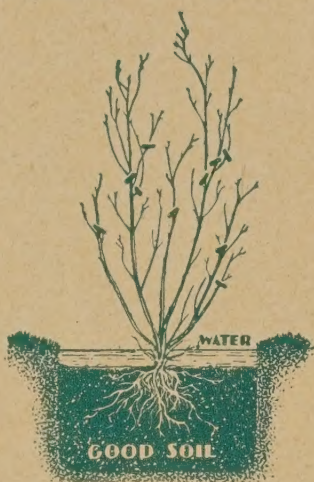
POCKET LEFT TO CATCH WATER

NOTE-- MANURE, UNLESS WELL ROTTED AND THOROUGHLY MIXED WITH THE SOIL SHOULD BE USED ONLY ON TOP IF USED AT ALL.



## How to Plant Trees and Shrubs—Cont.

Dig generous sized holes with perpendicular sides (never saucer shape.) Put the good dirt to one side so that you can use it around the roots. Loosen up the soil in the bottom of the hole. Set trees one or two inches deeper than they stood in the nursery; set shrubs at about the same depth they stood in the nursery or slightly deeper. Spread roots out naturally and work soil over and around them. Keep putting in good dirt until the hole is nearly full, tramping the dirt firmly about the roots. If the ground is dry, pour in a bucket of water. Finally fill up the hole with loose dirt which should not be tramped (see illustration to right and



at bottom of page 6). At planting time all trees and plants must be pruned if best results are to be expected the first year. Trim trees as shown in the illustration on page 4. Cut back shrubs one-third to one-half as indicated by black lines in illustration to the right. If shrubs are heavily branched, cut out a few whole branches at the base.

## Distance Apart to Plant

### Shade Trees

Large growers, like Elm.....30 to 50 feet  
Medium growers, like Sugar Maple.....25 to 40 feet

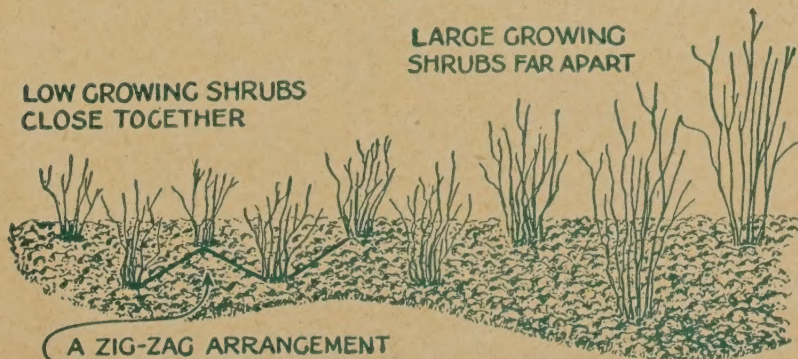
### Shrubs [In Beds]

Small dwarf varieties.....1 to 2 feet apart  
Medium tall growers.....1½ to 3 feet apart  
Tall growers.....3 to 6 feet apart

## Spacing Shrubs

LOW GROWING SHRUBS  
CLOSE TOGETHER

LARGE GROWING  
SHRUBS FAR APART



A ZIG-ZAG ARRANGEMENT  
IS BEST

## Distance Apart—Fruit Trees and Small Fruits

The locality and soils should be considered in spacing fruit trees. Orchard fruits especially make a more vigorous growth in heavy soils. Again some varieties are small growers and the others are vigorous.

As a general rule the following distances are suggested:

Apples	30 to 40 feet each way
Sweet Cherries	30 to 40 feet each way
Pears, Apricots, Plums, Peaches	16 to 24 feet each way
Quinces	16 to 20 feet each way
Grapes	6 by 8 feet to 8 by 10 feet
Currants, Gooseberries	4 by 6 feet to 6 by 8 feet
Raspberries	3 by 6 feet to 5 by 8 feet
Blackberries	4 by 7 feet to 6 by 9 feet

In case of dwarf apples or pears the distance may be one-half of the distance recommended for standard varieties.

## EVERGREENS [Planted for Windbreak]

For results in 6 years or more ..... 10 feet apart

For results in 4 years ..... 5 feet apart

(Take out every other tree later.)

For results in two years ..... 2½ feet apart

(Gradually thin out to 10 feet apart as trees develop.)

## How to Plant Evergreens

- (1) Dig hole a foot larger and deeper than ball of earth. Provide good, loamy top soil to fill around ball.



**NOTE:** Evergreens with bare roots are planted the same as trees. (See pages 6 and 7.) Take care never to leave the roots exposed a single moment.



## How to Plant Hedges



SET HEDGE TRIFLE LOWER THAN THEY WERE IN NURSERY TO GET A DENSE HEDGE AT BOTTOM

DIG ONE SIDE OF TRENCH STRAIGHT AND IN LINE, PLACE PLANTS AGAINST THIS SIDE TO GET A STRAIGHT HEDGE

Set Privet and similar varieties 6 to 12 inches apart.

Set Barberry and other medium tall bushy shrubs 1 to 2 feet apart. Set tall shrubs for high hedges 2 to 4 ft. apart.

## How to Trim Hedges

At planting cut tops back to 4 or 6 inches above the ground. Each spring the hedge can be trimmed back to the desired height and width. Frequent trimming during early summer will make the hedge grow dense. Trim both the sides and the top or else hedge will grow wider at the top and become open at the bottom.



Right



Wrong

## Spring Planted BULBS and TUBERS

**Spring Planted Bulbs and Tubers** include cannas, dahlias and gladioli, and they cannot be treated as other bulbs as frost is fatal to the tubers. Dig them up in the fall before the ground freezes and after they have been thoroughly dried and cleaned, store them where they will not dry out in a cool cellar in shallow boxes. Plant them in spring as soon as danger of frost has passed.

**Cannas** should be planted about 2 feet apart and 3 to 4 inches deep. Give plenty of water during summer.

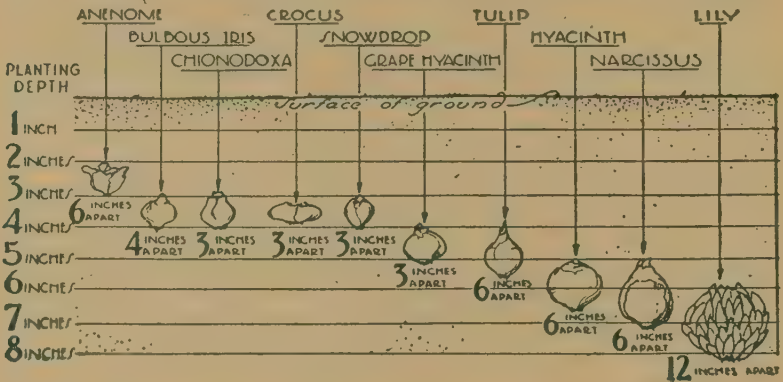
**Dahlias** should be planted not closer than 18 inches apart and 6 inches deep, laid flat, eyes and sprouts up.

**Gladioli.** Plant gladioli 2 to 4 inches deep and 4 to 6 inches apart, in rich soil in a sunny place.

**Lilies.** The most desirable soil for lilies is a loose sandy loam which will be enriched by top dressing of manure and should be well drained. Plant lilies in groups about 6 inches deep and 8 to 12 inches apart. Never allow manure to come into direct contact with the root bulbs. They may be left in the ground from year to year.

## Fall Planted Bulbs

Fall Planted Bulbs such as tulips, common narcissus, daffodils, hyacinths, should be planted in specially prepared beds which possess good natural drainage. The most satisfactory soil for growing bulbs is a fibrous loam well supplied with sharp sand. See planting chart below.



## How to Plant Perennials

The soil should be well worked and free of big lumps and air pockets. The average planting distance for perennials is 1 foot apart. Vigorous growers like peonies and mallows require as much as 3 feet apart. No. 1 plants (see below), such as iris, should be planted with the main root just below the surface of the ground. No. 2 plants, such as peonies, should be planted with the tips of the buds at or just below the surface of the ground. No. 3 plants, in which the leaves spring from a crown, should be planted with this crown on the level of the dirt line. No. 4 plants, such as hollyhocks, should be planted with the root straight down and the bud just below the surface of the dirt. Spread roots out naturally. Bring the soil in contact with all roots and press firmly. If the plants are watered, water the roots and not the tops.

To prevent injury by severe winters, apply a mulch of hay, straw or leaves after the ground is frozen.



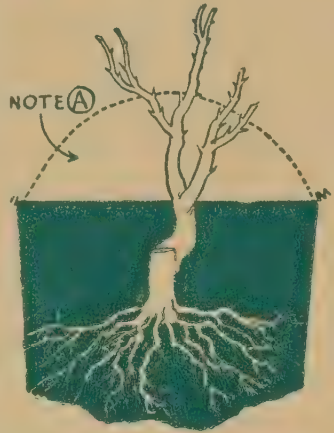


# How to Plant ROSES



Planted wrong.  
Not deep enough,  
roots bunched.

Roses require a plentiful supply of organic matter in the soil and thorough drainage. An improvement in both soil conditions and drainage can be gained by proper preparation of the beds. Of course, the rose bed should not be located in a place where the surface drainage is bad. The water should



Planted right. Roots  
spread out, deep  
enough.

be made to drain away from, rather than toward the beds.

Excavating the bed to a depth of three feet is none too deep. At this depth a layer of stones will provide drainage when it is needed. Filling the bed in layers of manure, then dirt, then manure, until the bed is filled, allowing for a settle, will provide a deep fertile soil which the roses will respond to by producing a rich growth and many flowers. Roses like a medium heavy soil.

The manner of planting the rose is the same as planting a shrub but they are pruned differently. All **grafted roses** should be planted deep enough to bring the joint between the root stock and top **at least 3 inches below the surface of the ground**. Unless this is done the strong sturdy root is liable to send up a shoot which, if not cut off, will flourish and cause the grafted top to die.

The pruning of roses for planting differs according to the type of rose planted. Cut back the weaker growth. When planting in the fall, the dormant rose should be cut back about one-half its length. Prune again in the spring, leaving but 2 or 3 stems with 4 or 5 buds on each stem. Cut back spring planted roses to two or three stems with four or five buds on each.

**NOTE A:** Fall planted roses can be protected by mounding up the dirt around them and covering the ground about with litter to prevent alternate freezing and thawing.

## Spacing Roses

	Planting Distance	
	Close	Normal
Bush Roses .....	2 feet	2½ feet
Hybrid Teas .....	1½ feet	2 feet
Hybrid Perpetuals .....	2 feet	2½ feet
Climbers, on banks .....	2½ feet	3 to 4 feet
Climbers, on fences .....	8 feet	10 to 15 feet

## How to Plant Bush Fruits

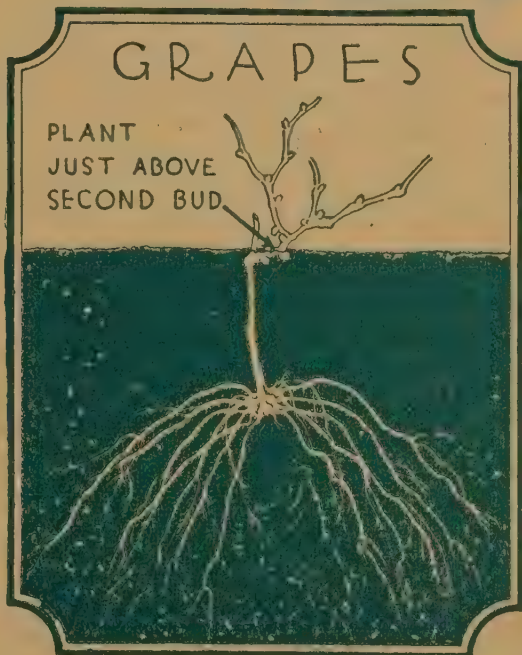
### Currants and Gooseberries

Set 2 or 3 inches deeper than in nursery. Cut off half the tops and plant 4 or 5 feet apart and cultivate; for a commercial planting they should be given more room, 5 by 7 feet. Every year, soon as fruit is gathered, cut and burn all wood 3 years old. Let 5 or 6 new shoots come each year. To prevent worms eating the leaves, every year, as soon as the fruit is set, spray thoroughly with arsenate of lead, especially the lower branches where the worms always start.

### Raspberries and Blackberries

Plant in good garden soil 3 or 4 feet apart in rows 6 feet apart. In planting **Black Raspberries**, set them so bud in center of mass of roots is covered only one inch deep, using care not to break this bud. Tramp soil firmly over the roots. Don't bury the center bud too deep, the plant will be smothered. **Red Raspberries** should be set 1 to 2 inches deeper than they were in the nursery. Cut back all raspberries as soon as planted to within 6 inches or less of the ground. Don't let any fruit set first year. Cultivate between rows enough to destroy weeds and sprouts, not allowing the new shoots to make rows over 6 to 8 inches wide. After fruiting, cut out old canes and burn, leaving a few vigorous new ones to grow for fruiting the following year. Mulching always pays. In the spring, spray raspberries just before the buds open, with lime sulphur or Bordeaux mixture.

## How to Plant Grapes



Dig the hole as broad and deep as if a three year apple tree were to be planted. Fill the hole up to the right depth for planting with compost or rich soil. A few old bones in the bottom of the hole will make rich feeding for the vines later on. Trim the roots slightly and cut back the top to three or four strong buds. Use rich soil around roots. Always plant firmly. Leave a mulch of strawy manure over plant.



## Asparagus and Rhubarb

Plant **Rhubarb** 3 feet apart in rich garden soil, with the buds 1 inch below level of the ground.

Set **Asparagus** in rich soil a foot apart in a furrow 6 inches deep. Cover 3 inches and tramp. In hoeing, work soil towards plant so that by mid-summer the ground is level. Do not cover 6 inches deep at first or plants will be smothered. Cut sparingly the second year, after that cut all shoots 6 or 8 inches high until about the middle of June, then let tops grow.

Fertilize **Rhubarb** liberally with stable manure every year; also **Asparagus** when through cutting in June.

## How to Plant Strawberries



### TOO DEEP      TOO SHALLOW      JUST RIGHT

Plow or spade land deeply before planting. Plant with a spade. Push spade into ground to its full depth in spot where plant is to be. Press it to one side, insert roots and spread them out in fan shape and hanging down to their full length. Set plant with crown at surface or a little below it. (See illustration.) Remove spade and press dirt against roots by placing foot on either side of the plant and tramping lightly with ball of feet. Leave loose soil around plants. Remove all young leaves.

Extremely long roots may be cut back, leaving two or three of the older ones. Carry plants in pail of water. It will pay to water each plant after planting.

### Number of Trees or Plants on an Acre

2 feet each way....	10,790	12 feet each way.....	302
3 feet each way....	4,850	15 feet each way.....	194
4 feet each way....	2,723	18 feet each way.....	135
5 feet each way....	1,742	20 feet each way.....	110
6 feet each way....	1,210	24 feet each way.....	71
8 feet each way....	680	32 feet each way.....	40
10 feet each way....	430		

To ascertain the number of plants required to the acre at any given distance, divide the number of square feet (43,560) in an acre by the number of square feet you desire to devote to each plant. For instance, in strawberries planted 1 by 3 feet, each hill will occupy 3 square feet, making 14,520 plants to the acre.



## Care After Transplanting

**Pruning Trees and Shrubs.** After trimming back and pruning the limbs of ornamental trees, when planting, they need only enough trimming to shape them properly. Low side limbs should not be removed to raise the head until after two season's growth, when they may be gradually removed until the head is at the desired height. Shrubs need heading-in of the limbs getting out of bounds and the cutting out of older wood occasionally to keep them in the proper form. The general rule is to trim fall blooming shrubs, like hydrangeas, in the spring, and spring blooming shrubs, like spireas, in the early summer directly after they have bloomed.

**Cultivation.** Frequent shallow cultivation will produce a dust mulch and conserve much needed moisture in the soil. That is the most practical method of handling larger plantings. It should not be continued after the middle of August, otherwise the trees may not have time to mature and harden in preparation for winter.

**In the Orchard** it is best to cultivate all trees the same as you would corn, for several reasons, until they are large enough to shade the ground between them. During the summer it is a good practice to put in a leguminous cover crop. A cover crop will protect the soil and help prevent blowing and washing. It improves the chemical and physical condition of the soil by adding humus.

**Mulching.** For only a few trees, shrubs, etc., a mulch of such materials as grass clippings, old strawy manure, marsh hay or dead leaves may be used instead of a dust mulch.

**Watering.** Artificial watering, as an emergency measure in case of drought, is highly desirable. In any case water thoroughly. Do not sprinkle. Give the plant all the water it will take at one time. No more water need be applied for several days when this is done.

**Fertilizing.** Barnyard manure is excellent when obtainable. One pound of commercial fertilizer per inch of diameter broadcast from trunk to branch spread is excellent for established orchard trees.

Small fruits benefit from the same treatment. Manure strawberries when plowing but not after setting. Commercial fertilizer applied and watered in when plants are setting fruit improves their size and yield.



**Fig. 1—A Common Aphis.** An insect which sucks out the vital juices of the plants. It is found on the young growth and on the under side of the leaves. The leaves usually wither and curl on the infested part.



# Insect Pests

There are two classes of bugs and insects that may attack trees and plants. The first class eats the plant tissue and are best controlled by poisons which they take into their stomachs.

The second class is not as easy to control since they can be killed only by hitting each individual with the insecticide.

**Plant Diseases.** These may be classed as physiological, bacterial and fungous. Good culture will aid materially in preventing these troubles. Spraying also should be preventive.

Although spraying is one of the most expensive of the several orchard operations, it is absolutely essential to the production of high class fruit. It isn't a question any more of can you afford to spray but rather can you afford not to. It must not be assumed that spraying operations are uniformly successful. Success depends upon a thorough application of the right material at the proper time, or maybe several times. Of course to accomplish this one must first become familiar with the insects or diseases that infest the orchard.

## Remedies for Sucking Insects

Sap sucking insects (see figure 1), such as aphid or plant lice which suck the juice from the green leaves are best controlled by some tobacco solution as Blackleaf 40, Nicotine Solution, etc. They may be washed off of shrubs with the hose.

Sap sucking insects, like scale which suck the juice from the twigs or branches and even from the trunk itself, are best controlled by some dormant spray, such as Lime Sulphur solution, miscible oils, etc.

## Remedies for Chewing Insects

Leaf eating insects (see figure 2), such as beetles, weevils, grubs, worms, etc., are controlled by poison applied to the leaf.

Arsenate of Lead, Paris Green, etc., are most commonly used.



**Fig. 2—A Common Worm.** One form of chewing pests. Chewing insects eat the leaves of the plant entirely or eat holes in leaves.



